REMARKS

Claims 1-16 are pending in the application. By this amendment Applicants have amended several of the claims without introducing new matter. Claims 1 to 16 remain pending. Claims 1 and 14 are independent.

Priority

Applicants note with appreciation the acknowledgement of receipt of the priority papers submitted under 35 U.S.C. § 119 (a)-(d).

Claim Objections

Claims 6-9 were objected to under 37 CFR 1.75(c) as being improperly multiply dependent. Applicants have amended the claims to overcome this objection and treatment of these claims on their merits is respectfully requested.

Claim Rejection - 35 U.S.C. § 112

Claim 1 has been amended in light of the Examiner's helpful comments to overcome the rejection based on 35 U.S.C. § 112.

Claim Rejection - 35 U.S.C. § 103

Claims 1-5 and 10-16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,068,890 (Käumle) in view of JP07328245 (Sakota) further in view of JP08041410 (Nishimura). Applicants note with appreciation the machine translations of both Nishimura '410 and Sakota '245. For

more clarity, Applicants turned to EP07307040, which is the European equivalent of Sakota '245. The European application was published in English, and makes for somewhat easier reading than the machine translation. A copy of EP '040 is enclosed for the Examiner's convenience.

Applicants have amended their claims to indicate that the light wheel casting of the claims is in fact a single-piece light-metal casting, and particularly a single-pieced aluminum automotive wheel. Ample support for this amendment is found throughout the specification, claims and drawing figures. Applicants particularly note Fig. 5 and its accompanying text which clearly shows that the cast aluminum wheel is, in fact, a unitary casting.

The rejection relies upon the three-way combination of Käumle '890 with Sakota '245 and Nishimura '410 to show each of the claimed elements. In order of the process, Sakota is relied upon to show the casting steps for forming the aluminum alloy wheel. Käumle '890 is relied upon to show a method for gloss coating the cast aluminum wheel. Käumle includes the steps of mechanically polishing the wheel surface, coating with a first finish, and followed by coating with a glossy metal/metal alloy layer, and a final gloss coat. Nishimura '410 is relied upon to show that the mechanical polishing can be conducted through barrel polishing.

Directing the Examiner's attention to Sakota '245 and in particular page 2 of corresponding EP '040, lines 13-20 discuss single-piece aluminum alloy wheels. According to the Sakota disclosure, one piece wheels have the advantages of high rigidity, reduced number of parts, etc. These advantages come at the cost of increased problems in that changing the design is more complicated and that management of

pouring conditions becomes more difficult and severe for preventing structural defects that lead to air leakage in the final product. Thus, Sakota '245 teaches away from the making of single-piece aluminum alloy wheels. In addition to these problems, the rim portion must also be made of increased thickness, and, therefore, cannot lead to desirable weight reduction in the wheel. Thus, Sakota '245 directs its method to the formation of 2 or 3 piece wheel designs.

In addition, regarding Sakota, the Office Action states that "Sakota et al. specifically teaches that the alloy is degassed so as to inhibit the formation of blowholes in the casting surface (Section 19)". However, Sakota clearly describes that the "blowholes" are created due to the welding process of separate pieces (i.e., a disk and a rim). That is, the formation of blowholes is a problem peculiar to a 2 or 3 piece wheel structure. Therefore, Sakota does not teach or suggest the high-pressure casting of the single-piece light metal part or aluminum wheel as claimed.

Applicants respectfully submit that Sakota '245 teaches away from one piece aluminum alloy wheel castings. Accordingly, Sakota '245 cannot teach or suggest Applicants' claimed method for forming a single-piece, unitary aluminum alloy wheel. Since Sakota '245, alone, discloses the casting steps, neither Käumle '890 nor Nishimura '410 remedy this deficiency. Accordingly, the hypothetical combination of Käumle '890, Sakota '245 and Nishimura '410 simply can not teach or suggest every claimed element, in that none of the references individually or combined teach the step of high pressure casting a single-piece aluminum wheel, as presently claimed.

Applicants respectfully submit that the claims as amended herein are patentable over the hypothetical combination. Withdrawal of the obviousness rejection is, therefore, respectfully requested.

Early reconsideration and allowance of all pending claims is, therefore, respectfully requested.

Respectfully submitted,

T. Daniel Christenbury
Reg. No. 31,750

TDC:MAP:gj
(215) 563-1810

In the Claims (clean copy as amended)

1. (Once Amended) A method for fabricating a light-metal casting, comprising the steps of:

casting a single piece light metal part by applying a casting pressure of more than about 50 megapascal from an ejection plunger to a molten metal of a light-metal material poured into a die, to form a casting having pinholes generated in a casting surface, wherein the generation of pinholes is suppressed to meet a predetermined condition;

polishing the casting to reduce a roughness of a polished surface obtained by polishing said casting surface to not more than a predetermined value;

painting the polished casting to form a first resin coating layer on said polished surface after being polished; and

plating said painted casting to form a layer of a metal or a metal compound through a dry-type plating on a surface of said resin coating layer.

2. (Once Amended) The method as described in claim 1, wherein the predetermined condition of the pinholes generated on said polished surface is that the number and a maximum opening dimension of the pinholes generated in a predetermined area of the polished surface is not more than a predetermined value.

3. (Once Amended) The method as described in claim 2, wherein the number of said pinholes is in the range of 1 to 15 per 100 cm^2 of said polished surface and said maximum opening dimension is not more than 2 mm.

4. (Once Amended) The method as described in claim 3, wherein that the number of said pinholes is in the range of 1 to 10 per 100 cm^2 of said polished surface, said maximum opening dimension is not more than 2 mm and the number of the pinholes having the maximum opening dimension of 1.0 to 2.0 mm is one or zero.

5. (Once Amended) The method as described in claim 1, wherein roughness of said polished surface obtained by said polishing step is 6.3 μm in Rmax.

6. (Once Amended) The method as described in claim 1,wherein said first resin coating layer is not less than 10 μm and not more than 40 μm thick.

7. (Once Amended) The method, as described in claim 1, wherein a transparent second resin coating layer is formed on said metal or metal compound layer.

8. (Once Amended) The method as described in claim 7, wherein each of said first and second resin coating layers includes a primer coating layer.

9. (Once Amended) The method as described in claim 7, wherein said transparent second resin coating layer is not less than 20 μm and not more than 50 μm thick.

10. (Once Amended) The method as described in claim 1, wherein said polishing step is a barrel finishing process.

11. (Once Amended) The method as described in claim 1, wherein said plating step for forming a layer of a metal or a metal compound through said dry-type plating is a sputtering process.

12. (Once Amended) The method as described in claim 1, wherein said casting step includes a pressurizing step for applying, by a pressurizing pin, a pressurizing force to a predetermined portion of the molten metal of said light-metal material filled in a die cavity during a solidification process of said molten metal under high pressure.

13. (Once Amended) The method as described in claim 1, wherein said casting of said light-metal material is an aluminum wheel.

14. (Once Amended) A shiny aluminum vehicle wheel comprising, a single-piece, unitary aluminum wheel, cast by a high-pressure casting process, in which a molten metal of an aluminum material filled in a cavity of a die for casting a vehicle wheel is pressurized by an ejection plunger and in a solidification process of the molten metal, a thick portion of the cavity is pressurized by a pressurizing pin arranged in the die, wherein pinholes generated in a polished surface of the aluminum casting after being polished have a dimension of not more than 2.0 mm diameter and

are not more than 15 per 100 cm^2 area in quantity; and wherein the aluminum wheel comprises a surface-treated layer wherein the casting surface is a barrel-polished to form a polished surface with a roughness Rmax of not more than 1.6 μm, a resin coating layer with a thickness of not less than 10 μm and not more than 40 μm is formed as an undercoat on an said polished surface, a dry-tape plating layer made of a metal or a metal compound is formed on said resin coating layer and a transparent topcoat layer is formed on said dry-tape plating layer so as to provide a design surface.

15. (Once Amended) A shiny single-piece, unitary aluminum vehicle wheel as described in claim 14, wherein said aluminum material is aluminum.

16. (Once Amended) A shiny single-piece, unitary aluminum vehicle wheel as described in claim 14, wherein said aluminum material is an aluminum alloy.